

Abstract of the Disclosure

A field effect transistor has a floating gate with an extended portion. A selectively chemoreceptive finger or layer is electrostatically coupled to the extended portion of the floating gate, and induces a voltage on the gate in response to selected chemicals or other conditions affecting the finger. The voltage on the gate modulates current flowing between a source and a drain of the transistor, effectively sensing the presence of the selected chemicals or conditions. In one embodiment, multiple chemoreceptive fingers are electrostatically coupled to the extended portion of the floating gate. In a further embodiment, an array of such field effect transistors provide a sensor for multiple conditions.